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EXAMINER
LEE, TIMOTHY L

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2697	6

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/532,611	Applicant(s) ELLIOTT ET AL.	
	Examiner Timothy Lee	Art Unit 2697	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-44* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-44* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 March 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 37-44 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 37 recites the limitation "receiving the first payload at the cross-connect units; removing the first telecommunications signal from the first payload and inserting the first telecommunications signal in a second payload". The exact wording can also be found in the specification on page 5, lines 20-23. The specification, however, never goes into detail nor explains why someone would perform this step.

3. Claims 35 and 36 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 35 discloses a "plurality of clock recoverable interface cards...; a plurality of clocked interface cards". While the specification mentions the claim limitations on page 4, they are not explained in any detail.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 2, 3, 4, 7, 9, 10, 17, 18, 22 and 35 are rejected under 35 U.S.C. 102(e) as being anticipated by Smith (US 6,188,686). Smith discloses a switching apparatus which includes a plurality of input ports and a plurality of output ports. See Figs. 2 and 13. Smith discloses that ATM cells are received at the data ports DP0 to DP127 from AMT channels connected to these ports. The ATM channels may be CBR, VBR, ABR, or others (from first interface card to second interface card...capable of supporting multiple types of interfacing cards; a plurality of interface cards for transmitting and receiving data streams). See col. 13, line 51-col. 14, line 6. The data units may operate asynchronously, but they can also operate synchronously to perform a series of switching cycles (plurality of clock recoverable interface cards...having no synchronization information; a plurality of clock interface cards...including data and synchronization information). See col. 5, lines 55-65. The system contains a switching controller 20 which is connected to all of the data units and all the connection units and also the switching units (a control unit for controlling the operation of the apparatus). See col. 13, lines 39-47. Fig. 6 shows that the switching units contain a set of multiplexers, where each multiplexer can receive data from multiple lines and output them onto one line (...combining the received data streams so as to generate at least one cross-connected data stream...transmitting

the data stream to the interface cards). See Figs. 6 and 6, and col. 18, line 29-col. 19, line 32. As can be seen in Figs. 2 and 13, the ports (interface cards) can be connected to each other through the switching units (parallel data buses, for providing connectivity between each of said plurality of interface cards). As mentioned previously, Smith discloses that the system is capable of operating in asynchronous mode, so this means that data can be sent without synchronization information over "clock recovered" data buses.

6. Regarding claims 2, 3, 9, 10, and 17, as mentioned previously, the data inputs can support all sorts of data rates, from CBR to ABR to VBR (data bus has a first bus rate); this also means that the buses can support at least one bus rate. It also means that more than one of the ports can handle data of a first rate. Furthermore, it also means that two different sets of ports could handle two different rates of data.

7. Regarding claim 7, as shown in Figs. 2 and 13, any interface card and communicate with any other interface card through the switching units.

8. Regarding claim 18, grouping a first set of ports together could form one plane, while grouping the second set of interfaces together would form the second plane.

9. Regarding claims 4 and 22, Smith discloses that for n inputs, the cell-routing process will take n+1 clock cycles (parallel data buses further includes a closed parallel data bus). See col. 21, lines 10-15. To provide these clock cycles, the system must contain a reference clock.

10.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Smith in view of Demiray et al. (US 5,740,157) and in further view of Czerwiec et al. (US 5,161,152). The rejection of claim 1 stands in this rejection as well. Smith does not expressly disclose a redundant controller nor a redundant cross connect unit. Demiray et al. discloses a redundant crossconnect unit for when outages occur in the line of the modules. See Abstract, and Fig. 1. Czeriec et al. discloses using redundant controllers. See col. 5, lines 22-26. It would have been obvious to a person of ordinary skill in the art at the time of the invention to use redundant components in the system disclosed by Smith. One would have been motivated to do this because having redundant components can keep the system working in case of a failure to one of the components.

13. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith in view of Lamarche et al. (US 6,414,953). The rejection of claim 1 stands in this rejection as well. Smith does not expressly disclose transmitting different protocols or using a housing. Lamarche et al. discloses a multi-protocol cross connect switch that can connect different protocols. See Fig. 1, and col. 2, lines 46-61. Lamarche et al. also discloses putting all of the interconnections in a housing. See Fig. 2, and col. 2, line 62-col. 3, line 17. It would have been obvious to use connect multi-protocols together and to use a housing to place all of the ports or cards. One would have been motivated to connect multi-protocols together because it gives the switch more functionality, and one would have been motivated to use a housing because that organizes the cards in an efficient manner.

14. Claims 11, 13, 15, 16, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith. Smith does not expressly disclose the exact rate at which the data bus transmits data, but it would have been obvious to choose a value like 311 MHz. Likewise, the same reasoning applies to the STS-192 rate and the STS-48 rate for the lower speed. Regarding claim 16, it would have been obvious to split one of the data streams into 4 and to transmit them over parallel buses to form a 32-bit stream. It is well-known in the art to split from serial to parallel in order to speed up data delivery.

15. Regarding claim 36, it would have been obvious to send the information that required a clock (i.e. synchronous information) with the clocked interface cards, and it would have been obvious to send the information that didn't need a clock (i.e. asynchronous information) with the clock recoverable interface cards.

16. Claims 12, 14, 20, 21, 23, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith in view of Tarridec et al. (US 4,751,699). The rejection of claim 1 stands in this rejection. Smith does not expressly disclose a 32-bit clock recovered bus. Tarridec et al. discloses using 32 bit messages in a system that includes clock recovery using a phase locked loop and an osciallator. See at least col. 8, lines 33-58. It would have been obvious to use a 32-bit clock recovered parallel data bus as 32 is just an arbitrary value. It would have been obvious to choose 155 MHz as the value for the oscillator as this is an arbitrary value. The same reasoning applies for the 19 MHz clock.

17. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Smith in view of Upp et al. (US 5,967,405). The rejection of claim 1 also stands in this rejection. Smith does not expressly disclose converting different formatted packets into a single format. Upp et al.

discloses a variety of modules used with the ultimate result being a SONET formatted signal. See col. 2, lines 55-61. It would have been obvious to use a standard data format for all signals. One would have been motivated to do this because using a standard format in the crossconnect makes transmitting signals through it a simpler process.

18. Claims 25-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith in view of Kosugi et al. (US 5,189,410). The rejection of claim 1 also stands in this rejection. Smith does not expressly disclose additional data streams that include synchronization information. Kosugi et al. discloses having a first interface means for inserting frame synchronizing information. See col. 3, lines 30-55. It would have been obvious to insert such information into a frame. One would have been motivated to do this because the components of a synchronized system must have some sort of information indicating when the system is in sync.

19. Regarding claims 26, 27, and 28, as mentioned previously, the system can handle data of different rates, whether it be a second, third, or fourth rate.

20. Regarding claims 29, 30, 31, 32, 33, and 34, all of these claims are choosing arbitrary rates that would have been obvious to a person of ordinary skill in the art to choose themselves.

21. Claims 37 and 40-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith in view of Madonna (US 5,737,320). This rejection is similar to the rejection of claim 1. Smith does not expressly disclose removing the first telecommunications signal from the first payload and inserting the first telecommunications signal in a second payload. Madonna discloses sending "empty" and "full" packets around a ring structure. For example, the first node in Madonna could send a "full" packet. The next node could remove the information that it needs from that packet. Later, another node could send out an "empty" packet and the node that

removed that information initially could place that information back into the "empty" packet for transmission to another node. See at least col. 14, line 13-col. 15, line 17. It would have been obvious to load and unload signal data in this manner. One would have been motivated to do this because the crossconnect unit may want to examine the payload data (i.e. check for errors), before sending it further along the network.

22. Regarding claims 40 and 41, it would have been obvious to pre-align the signal by a certain offset. In this way, the signal could be entered into the payload with less hesitation.

23. Regarding claim 42, as mentioned previously, Smith discloses multiplexing signals together for form an "aggregate".

24. Regarding claims 43 and 44, they involve the same concept as removing from the first payload and placing in a second payload, except now it's done with a separate card.

25. Claims 38 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith in view of Madonna in further view of Lamarche et al. See the previous rejection that involved Lamarche et al.

Conclusion

26. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Martin et al. (US 5,841,760), Lovelace et al. (US 5,901,136), Read et al. (US 5,436,890), and Abbott et al. (US 4,378,998) disclose system that involve cross connects.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy Lee whose telephone number is (703)305-7349. The examiner can normally be reached on M-F, 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (703)305-4789. The fax phone numbers for the organization where this application or proceeding is assigned are (703)746-9420 for regular communications and (703)746-9420 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-4700.

TLL
May 19, 2003

RICKY NGO
PRIMARY EXAMINER